# Prevalence of Bacterial Contamination in Waterlines of Hamadan Dentistry School Units and Drinking Water Supply of Local Area in 2010

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**Background & Objectives:** The quality of dental unit water is of considerable importance since patients and dental staff are regularly exposed to water and aerosols generated from the dental unit. The purpose of this study was to evaluate the bacterial contamination and biofilms formation of waterlines of dentistry units at dental faculty of in Hamedan University of Medical Sciences and drinking water sources contamination of Hamadan city in 2010.

**Methods:** Overall 114 inner and outer water samples from dental units in the different Department of dentistry faculty and simultaneously 10 drinking water samples of city were selected to assess microbial contamination in water sources. Samples were cultured in convenient media cultures and colony count forming units and bacterial isolated were detected by differential tests. Data was gathered through a questionnaire and analyzed using ANOVA and SPSS software.

**Results:** Of 114 cultured samples from waterlines of dentistry units, 41 positive cultures (35.9%) were obtained. From 41 positive cultures, 21 bacteria species and fungi (51.2%) were isolated. The most important gram-positive bacteria were as follow: *Micrococci leutus* (47.6%), and *Staphylococcus epidemidis* (28.6%), and also 20 gram-negative bacteria (48.8%) were isolated as follow: Brevundimonas (35%), *Acinetobacter bummani* and *Pseudomonas aeroginosa* (15%). The mean of colony count forming units from inner water was 610 CFU/ml and 1264/1 CFU/ml for outter water of dental units, that significant differences were not observed (P.value = 0/34). From 56 water samples that were taken from wards of Endo, Restrotive, Children, Perio, Surgery and Protez, overall 15 biofilms (26.7%) were obtained, however significant differences were not observed (P.value = 0/24) between the cases of biofilms and the water samples that were taken from each wards. From 10 drinking water samples of city, only 1 bacteria species (10%) was isolated.

**Conclusion:**Our results showed that bacterial contamination of outer waterlines was relatively more than inner waterlines from tested dental units. Outer waterlines were contaminated with Pseudomonas aeroginosa, however, coliforms were not observed.

**Keywords:** Bacterial Contamination; Water; Dentistry Unit; Biofilm